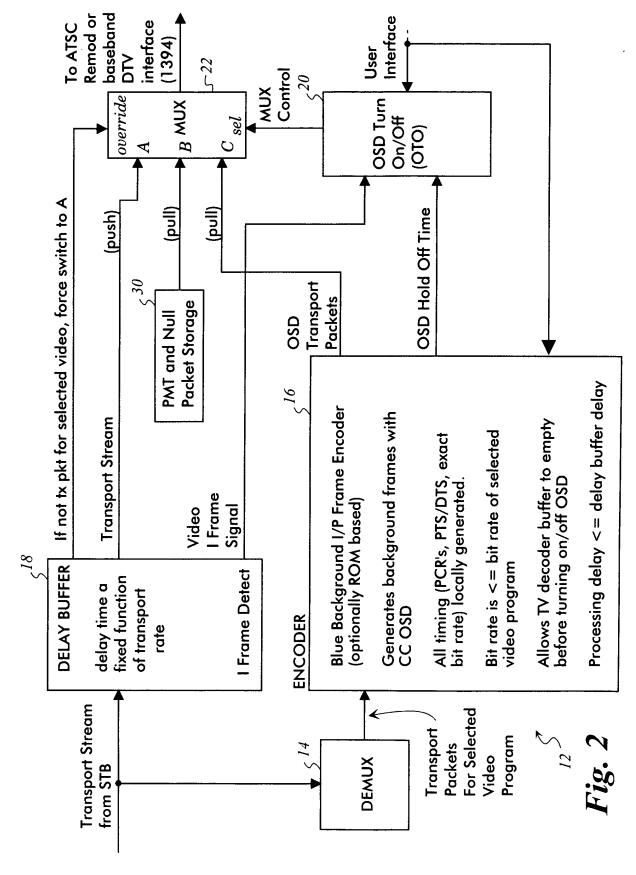
COPY OF PAPERS ORIGINALLY FILED

Title: MPEG On Screen Display Coder for DTV Interfaces Inventor: Wayne Bretl, et.al.
Docket No.: 7081 Serial No: 09/330,769 Sheet 1 of 10

or baseband DTV interface (1394) To ATSC Remod by packets for MPEG encoded locally generated video with OSD video program deleted and replaced a) original stream intact
 b) packets for selected MPEG encoded multiplexed MPEG 2 transport stream consisting of either generated MPEG encoded OSD video and replace with locally If OSD on, delete incoming Analyze incoming stream transport stream with selected MPEG multiplexed MPEG 2 program and other if on, select what user input: turn OSD on/off encoded video to display services

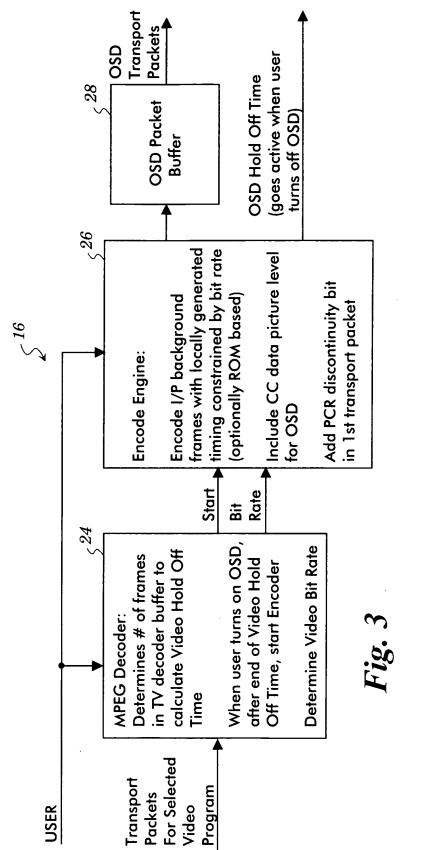
Title: MPEG On Screen Display Coder for DTV Interfaces Inventor: Wayne Bretl, et.al. Docket No.: 7081 Serial No: 09/330,769 Sheet 2 of 1

Sheet 2 of 10



Title: MPEG On Screen Display Coder for DTV Interfaces Inventor: Wayne Bretl, et.al.
Docket No.: 7081 Serial No: 09/330,769 Sheet 3 of 1

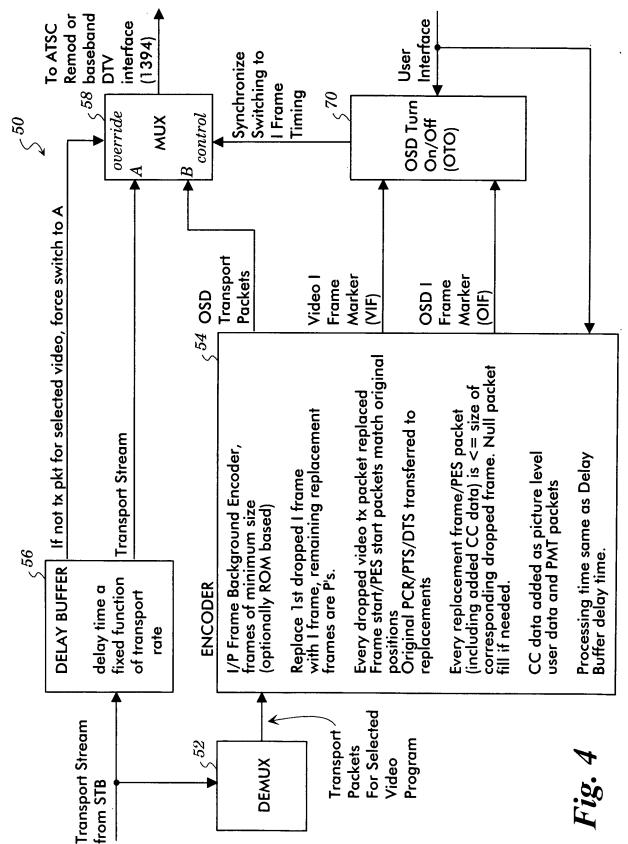
Sheet 3 of 10



Title: MPEG On Screen Display Coder for DTV Interfaces

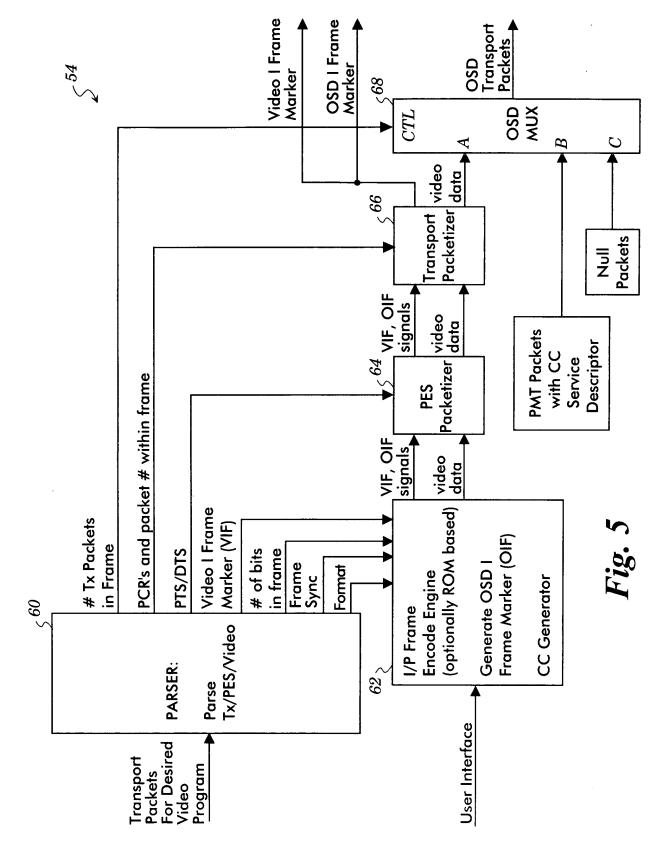
Inventor: Wayne Bretl, et.al. Docket No.: 7081 Serial No.

Docket No.: 7081 Serial No: 09/330,769 Sheet 4 of 10



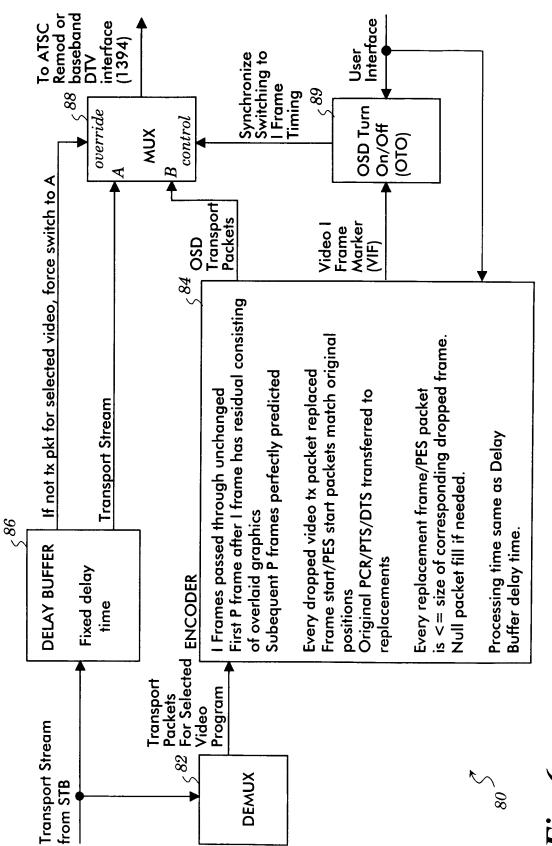
Title: MPEG On Screen Display Coder for DTV Interfaces Inventor: Wayne Bretl, et.al. Docket No.: 7081 Serial No: 09/330,769 Sheet 5 of 1

Serial No: 09/330,769 Sheet 5 of 10



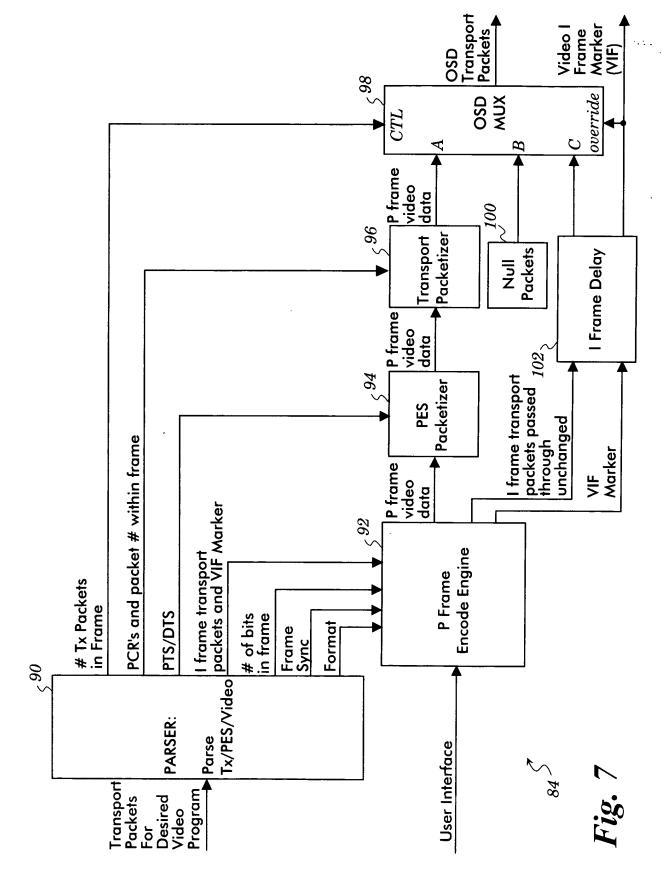
Title: MPEG On Screen Display Coder for DTV Interfaces Inventor: Wayne Bretl, et.al.

Docket No.: 7081 Serial No: 09/330,769 Sheet 6 of 10



Title: MPEG On Screen Display Coder for DTV Interfaces Inventor: Wayne Bretl, et.al.
Docket No.: 7081 Serial No: 09/330,769 Sheet 7 of 1

Sheet 7 of 10

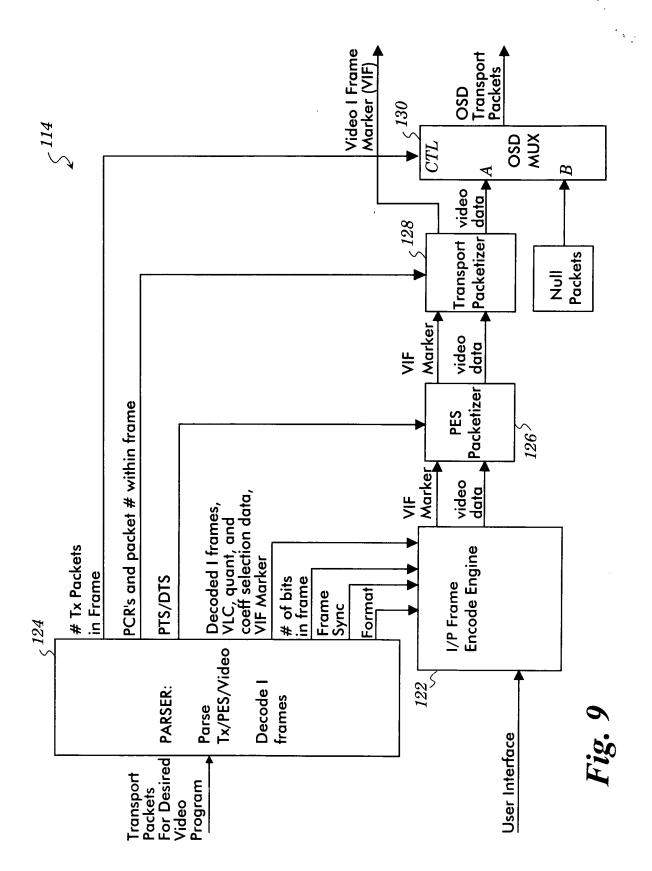


Title: MPEG On Screen Display Coder for DTV Interfaces Inventor: Wayne Bretl, et.al.
Docket No.: 7081 Serial No: 09/330,769 Sheet 8 of 1 Sheet 8 of 10 Interface Remod or interface To ATSC Synchronize Switching to (1394)User l Frame Timing 120 OSD Turn B control X N N On/Off (OTO) 118> **Transport Packets** Frame Marker Video I If not tx pkt for selected video, force switch to A OSD (ME) Frame start/PES start packets match original positions I frame, subequent P frames perfectly predicted from Original PCR/PTS/DTS transferred to replacements First P frame after I frame perfectly predicted from and reencoded with original coefficient, VLC, and I frames are decoded and overlaid with graphics is <= size of corresponding dropped frame. Every dropped video tx packet replaced Every replacement frame/PES packet Transport Stream Processing time same as Delay Null packet fill if needed quantization selections 911previous P frame Buffer delay time. **DELAY BUFFER** Fixed delay ENCODER time **Fransport** Selected Program Packets Video Transport Stream 둰 from STB **DEMUX** 112

٦,

Title: MPEG On Screen Display Coder for DTV Interfaces Inventor: Wayne Bretl, et.al.
Docket No.: 7081 Serial No: 09/330,769 Sheet 9 of 1

Sheet 9 of 10



Title: MPEG On Screen Display Coder for DTV Interfaces Inventor: Wayne Bretl, et.al.
Docket No.: 7081 Serial No: 09/330,769 Sheet 10 of 10

